IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 09/761,671

Filed: January 18, 2001

For: A DETAILED METHOD OF AND SYSTEM FOR MODELING AND ANALYZING BUSINESS IMPROVEMENT PROGRAMS

Group Art Unit: 3622

Examiner: Y. Retta

Reply Brief

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20321

Sir or Madam:

This reply brief is being submitted in response to the Examiners Answer for the above referenced application mailed on January 9, 2007.

Status of Claims

Claims 69 - 103 are rejected and are the subject of this appeal. No other claims are pending. Claims 1 - 68 have previously been cancelled without prejudice. Claims 104 - 118 were withdrawn due to a restriction requirement.

Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claims 69 - 76 are patentable under 35 USC 103 over Bielinski, Daniel W.; "How to sort out the premium drivers of post-deal value"; Mergers and Acquisitions; Jul/Aug 1993, Vol. 28, Iss.1; pg. 33, 5 pgs (hereinafter Bielinski), further in view of Brown, Carol E, Coakley, James, Phillips, Mary Ellen; 'Neural Networks Enter the World of Management Accounting""; Management Accounting; Montvale, NJ; May 1995, 5 pages (hereinafter Brown)?

Issue 2 - Whether claims 77 - 84 are patentable under 35 USC 103 over Bielinski in view of Brown?

Issue 3 - Whether claims 85 - 91 are patentable under 35 USC 103 over Bielinski in view of Brown?

Issue 4 - Whether claims 92 - 96 are patentable under 35 USC 103 over Bielinski in view of Brown?

Issue 5 - Whether claims 97 - 103 are patentable under 35 USC 103 over Bielinski in view of Brown?

The Argument

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claims 69 - 76 are patentable under 35 USC 103 over Bielinski in view of Brown?

The claims are patentable because the cited combination of documents used to support the rejection of claims 69 – 76 fails to establish a prima facie case of obviousness. The cited combination fails to establish a prima facie case of obviousness because:

1. the cited documents teach away from the proposed combination;
2. the cited combination requires a change in the principles governing the operation of the VBM method disclosed by Bielinski,
3. the cited combination fails to make the invention as a whole obvious, and
4. the cited combination fails to meet any of the criteria for establishing a prima facie case of obviousness.

The first reason the cited combination of documents fails to establish the prima facie case of obviousness required to sustain the rejections of claim 69 - 76 is that the cited combination of documents teaches away from the proposed combination. MPEP § 2145 X.D.2 provides that: "it is improper to combine references where the references teach away from their combination." Both documents, Bielinski and Brown describe methods for analyzing changes in the market value of a firm. Brown describes the use of a neural network by Deere to analyze changes in stock price (stock price = market value divided by the number of shares). Bielinski describes Value Based Management (hereinafter, VBM) a method that relies on the principles of Shareholder Value Analysis (hereinafter, SVA) developed by Rappaport (see page 31, Evidence Appendix) to identify specific actions that can be taken to improve value. The two documents teach diametrically opposed methods for analyzing and completing the same tasks. In doing this, they teach away from the proposed combination in at least five ways as detailed below:

1. Incompatible market assumptions. Bielinski teaches that there is an efficient market, Brown teaches that the market is inefficient (as does Barr).

Bielinski implicitly teaches a principle of SVA, namely that there is an efficient market. The efficient market theory teaches that enterprise value is determined by cash flow and the riskiness of the cash flow. It also teaches that the riskiness of the cash flow can be determined by the use of a beta measure as taught by Rappaport (see page 41, Evidence Appendix). Brown teaches and relies on the inefficient market theory as one of the principle goals of the neural network system it describes is to achieve returns above the S&P 500 (see page 37, Evidence Appendix). It is well known by those of average skill in the art that the

efficient market theory teaches, among other things, that it is not possible to systematically achieve returns above the returns from the S&P 500. It clearly would be improper to combine the teachings of a document that relies on the efficient market theory with the teachings of a document that teaches a method designed to identify and exploit an inefficient market.

2.   Incompatible time frames. Bielinski teaches and relies on history while Brown teaches and relies on forecasts (as does Barr). Bielinski specifically teaches away from the use of forecasts or projections.

Bielinski teaches the long term analysis of historical cash flow: "five years of historical cash flow are added up to arrive at a cumulative baseline cash flow number" (see page 30, Evidence Appendix). Brown teaches forecasting short term changes in performance (i.e. "modeling expected future returns") which produces an 80% monthly turnover in the portfolio (see page 37, Evidence Appendix). It clearly would be improper to combine the teachings of a document that discloses a method for completing 5 year analyses of historical performance with a method that teaches the prediction of short term changes in market value based on daily and weekly changes in a variety of factors. This is particularly true since Bielinski specifically teaches away from the use of projections for any aspect of analysis (see page 29, Evidence Appendix).

3.   Incompatible market value determinant identity and quantity. Bielinski teaches that there are three and only three determinants of market value, Brown teaches that there are forty (Barr teaches that the number varies).

Bielinski teaches and relies on one of the principles of SVA, namely that there are three and only three determinants of market value: cash flow, long term cash flow forecasts and the riskiness of the cash flow (see page 42, Evidence Appendix). As shown on page 44 of the Evidence Appendix, these three determinants of value are in turn driven by seven value drivers – these are the same seven value drivers cited by the Examiner in the newly provided Mills reference. Brown teaches that there are 40 indicators that determine market value (see page 37, Evidence Appendix). It clearly would be improper to combine a method that relies on the principle that there are only three determinants of market value with a method that teaches that there are 40 determinants of market value. Put another way, any model of market value that relied on Bielinski would show three factors driving market value, these three factors would in turn be driven by seven value drivers while any model relying on Brown would show 40 factors driving market value. By way of contrast, Barr teaches that the number of factors driving market value for any stock may vary depending on the data which also teaches away from any combination.

4.   Incompatible model topologies. Bielinski teaches and relies on the use of a tree topology while Brown teaches and relies on a network topology (as does Barr and every other neural net).

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Bielinski implicitly teaches another of the principles of SVA, namely the use of a tree topology to analyze changes in the value of a commercial enterprise (see page 44, Evidence Appendix) Brown teaches reliance on a network topology to complete the same analyses (see page 37, Evidence Appendix). It clearly would be improper to combine the teachings of a document that discloses the use of a tree topology to analyze market value changes with a method that teaches the use of a network topology for analyzing the same thing.

5.   Incompatible analysis methodologies. Bielinski teaches the use of sensitivity analysis while Brown teaches the use of scoring.

Bielinski teaches the use of sensitivity analysis in evaluating changes in the value of a commercial enterprise (see pages 29 - 32, Evidence Appendix). Brown teaches reliance on the neural network scoring capability to rank expected future returns for each stock in the portfolio (see page 37, Evidence Appendix). Because returns equal changes in value plus dividends (which tend to be fixed in value), the different analyses are analyzing the same thing. It clearly would be improper to combine the teachings of a document that discloses the use sensitivity analysis with a method that teaches the use scoring for analyzing the same thing. Barr is different than both of the other methods as it teaches training until one of several pre-defined criteria are met.

The Appellant respectfully submits that the Examiner is ignoring aspects of each of the cited documents that teach away from the proposed combination. This effort is contrary to MPEP 2145 which states (among other things) that "the totality of the prior art must be considered" (Hedges, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986)). Hedges goes on to say that "it is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art" (Hedges, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986)).

The second reason that the cited combination of documents fails to establish a prima facie case of obviousness for claims 69 - 76 is that the proposed combination of documents would change the principle of operation of the Bielinski method. MPEP 2143.01 provides that when "the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)".

As discussed previously, Bielinski teaches and relies on the principle that enterprise cash flow and the risk associated with the enterprise cash flow determines the value of an entire enterprise. The Examiner has proposed combining Bielinski and Brown to render obvious an invention for modeling an enterprise current operation where the value of the current operation portion of the enterprise is a function of enterprise cash flow. The Appellant respectfully

submits that this would only be possible if the principle of operation of the VBM method of the Bielinski reference were changed to recognize enterprise cash flow only explains a portion of the value of a commercial enterprise.

The cited combination would also force a need to change two other principles of operation for the VBM method disclosed by Bielinski in order to replicate the functionality of the claimed invention, namely: the strict reliance on historical cash flow and the related prohibition against using projections of any kind (see page 29 - 30, Evidence Appendix). It is well known by those of average skill in the art that an optimization analysis requires a forward looking model for use in evaluating the tradeoffs among different future alternatives. The Examiner has proposed using a combination with the VBM method to support optimization analyses. A modification to support that type of analysis would require changing the VBM principle of operation that relies on historical cash flow to a forward looking methodology that uses projections. Given the changes in the principle of operation of the VBM method taught by the Bielinski document required to replicate the functionality of the claimed invention, the teachings of the cited combination are clearly not sufficient to render the claims prima facie obvious.

The third reason the combination of documents cited in the 9 January 2007 Examiners Reply fails to establish a prima facie case of obviousness is that it fails to make the invention as a whole obvious as required by MPEP § 2141.02 which states that: "in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious." As noted previously, the obviousness rejections are based on a combination of Bielinski and Brown. Bielinski and Brown each teach away from the method of the instant application in a number of ways. For example, Bielinski teaches that cash flow explains the entire value of an enterprise while the invention of the instant application teaches that cash flow explains only a portion of the value. At the same time, Brown and Barr teach that external indicators determine the value of an enterprise while the invention of the instant application teaches that it is the performance of the elements of value. As noted previously, the two documents also teach away from their own combination and the Examiner has failed to identify any possible reasons for combining the two inventions. Taken together the cited combination of documents fails to make the invention as a whole obvious. The cited combination also fails to make a single aspect of the claimed invention obvious.

The fourth reason the cited combination of documents fails to establish the prima facie case of obviousness is that it fails to meet the criteria required for establishing a prima facie case of obviousness. MPEP 2142 provides that: "in order to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when

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combined) must teach or suggest all the claim limitations." As detailed below, the cited combination fails to meet all three criteria for establishing a prima facie case of obviousness required to sustain the rejection of claims 69 – 76:

1) The cited combination fails to meet the first criteria for establishing a prima facie case of obviousness for claims 69 - 76 because it does not provide any evidence indicating that there was any suggestion, teaching or motivation in the prior art to modify or combine the teachings of Bielinski and/or Brown. In particular, the Examiner has not identified how the combination of teachings would improve the functionality of either method and has previously provided documents that indicated there was a motivation not to make the cited combination. The Examiner has mentioned the identification of value drivers as a possible motivation. However, this unpersuasive as Rappaport already identifies the three determinants of value and the seven financial value drivers (see page 43, Evidence Appendix) Bielinski relies on so there is no need to use a neural net (or anything else) to identify them. This indicates that the Examiner has used hindsight to justify a combination that anyone relying solely on the cited documents would never propose.

2) The cited combination also fails to meet the second criteria for establishing a prima facie case of obviousness for claims 69 - 76 because it does not cite a combination of teachings that has a reasonable expectation of success. Reasons the cited combination of documents would be expected to fail include: optimization analysis requires a forward looking model rather than the backward looking model like VBM.

3) The cited combination fails to meet the third criteria because it does not teach or suggest one or more of the claim limitations for each of the claims. The Examiner did supplement the information provided by Bielinski and Brown with "official notice" that optimization is old and well known. However, this official notice is moot because, as detailed above, the Examiner has not identified a forward looking model capable of supporting an optimization analysis.

Finally, the fifth reason that claims 69 - 76 are patentable is that the claimed invention produces results that are concrete, tangible and useful. In view of the previously documented shortcomings in the cited combination of documents that were used as the basis of the claim rejection, it also clear that the claims represent an invention that is novel, surprising, new and non-obvious. Furthermore, the claimed invention produces results that help satisfy a long felt need for improved capabilities for understanding the linkage between operational decisions and market value.

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Issue 2 - Whether claims 77 - 84 are patentable under 35 USC 103 over Bielinski in view of Brown?

The claims are patentable in view of the shortcomings in the arguments that support the use of the cited combination of documents detailed in issue 1 and the novelty, non-obviousness and newness of the claimed invention for producing results that are concrete, tangible and useful. In particular, claims 77 - 84 are allowable for the first, second, third, fourth and fifth reasons advanced under Issue 1.

A sixth reason the claims are patentable is that the cited combination of documents fails to teach or suggest any of the claim limitations of independent claim 77.

A seventh reason the claims are patentable is that it the proposed combination of Bielinski and Brown would destroy the ability of the methods described by these documents to function. It is well established that when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the prima facie cause of obviousness cannot be properly made (In re Gordon 733 F.2d 900, 221 U.S.PQ 1125 Fed Circuit 1984). The operation of the VBM methodology requires that the inputs to each node in the tree arithmetically combine to produce a number that is then passed on to higher levels in the tree (see page 44, Evidence Appendix). It is well known to those of average skill in the art that the use of a neural network in place of any part of the tree would destroy the ability to arithmetically generate the numbers required at each tree node. In short the proposed, theoretical combination would destroy the ability of the VBM method taught by Bielinski to function.

Issue 3 - Whether claims 85 - 91 are patentable under 35 USC 103 over Bielinski in view of Brown?

The claims are patentable in view of the shortcomings in the arguments that support the use of the cited combination of documents detailed in issue 1 and the novelty, non-obviousness and newness of the claimed invention for producing results that are concrete, tangible and useful. In particular, claims 85 - 91 are allowable for the first, second, third, fourth and fifth reasons advanced under Issue 1 and the seventh reason advanced under issue 2.

A seventh reason the claims are patentable is that the cited combination of documents fails to teach or suggest any of the claim limitations of independent claim 85 or the related dependent claims 86 - 91.

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Issue 4 - Whether claims 92 - 96 are patentable under 35 USC 103 over Bielinski in view of Brown?

The claims are patentable in view of the shortcomings in the arguments that support the use of the cited combination of documents detailed in issue 1 and the novelty, non-obviousness and newness of the claimed invention for producing results that are concrete, tangible and useful. In particular, claims 92 - 96 are allowable for the first, second, third, fourth and fifth reasons advanced under Issue 1.

A sixth reason the claims are patentable is that the cited combination of documents fails to teach or suggest any of the claim limitations of independent claim 92.

A seventh reason the claims are patentable is that it the proposed combination of Bielinski and Brown would destroy the ability of the methods described by these documents to function. It is well established that when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the prima facie cause of obviousness cannot be properly made (In re Gordon 733 F.2d 900, 221 U.S.PQ 1125 Fed Circuit 1984). For example, imposing a tree topology on the methods of Brown would destroy the ability of the value analysis method taught by Brown to function. This in turn provides additional evidence that the proposed combination is improper and that the Examiner has failed to establish the prima facie case of obviousness required to sustain the rejection of a single claim.

Issue 5 - Whether claims 97 - 103 are patentable under 35 USC 103 over Bielinski in view of Brown?

The claims are patentable in view of the shortcomings in the arguments that support the use of the cited combination of documents detailed in issue 1 and the novelty, non-obviousness and newness of the claimed invention for producing results that are concrete, tangible and useful. In particular, claims 97 - 103 are allowable for the first, second, third, fourth and fifth reasons advanced under Issue 1 and the seventh reason advanced under issue 4.

A seventh reason the claims are patentable is that the cited combination of documents fails to teach or suggest any of the claim limitations of independent claim 97 or the related dependent claims 98 - 103.

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Conclusion

For the extensive reasons advanced above, Appellant respectfully but forcefully contends that each claim is patentable. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,

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Dated: January 27, 2007